

THE ANNALS
AND
MAGAZINE OF NATURAL HISTORY.

[SEVENTH SERIES.]

"..... per litora spargite muscum,
Naiades, et circum vitreos considite fontes:
Pollice virgineo teneros hic carpite flores:
Floribus et pictum, divæ, replete canistrum.
At vos, o Nymphæ Craterides, ite sub undas;
Ite, recurvato variata corallia trunco
Vellite muscosis e rupibus, et mihi conchas
Ferte, Deæ pelagi, et pingui conchylia succo."
N. Partheni Giannettasi, Ecl. 1.

No. 25. JANUARY 1900.

I.—*Arctic Crustacea: Bruce Collection.* By the
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THE Crustacea collected by Mr. W. S. Bruce in Franz-Josef Land during 1896 and 1897, in connexion with the well-known Jackson-Harmsworth Expedition, have recently been described by Mr. Thomas Scott, F.L.S., in the 'Journal of the Linnean Society.' In 1898 Mr. Bruce made three new Arctic cruises: the first with Mr. Andrew Coats in his yacht 'Blencathra' to Kolguev and Novaya Zemlya; the second with the same friendly sportsman "to Bear Island, Hope Island, across the Barents Sea almost to the north end of Novaya Zemlya, and to the Wiche Islands"; the third with the Prince of Monaco, on the 'Princesse Alice,' to Bear Island, Hope Island, several parts of Spitzbergen, and the Greenland Sea.

As might have been expected, Mr. Bruce made every possible use of his opportunities in the interests of natural science. The Malacostraca thus obtained he has, on the suggestion of Mr. Scott, submitted to me for determination, and the following catalogue is the result.

BRACHYURA.

Tribe OXYRRHYNCHA.

Fam. Maiidæ.

Genus HYAS, Leach, 1813-1814.

Hyas araneus (Linn.).

1758. *Cancer araneus*, Linn., Systema Naturæ, ed. x. (reprint, 1894), p. 628.
 1790. *Cancer bufo*, Herbst, Naturg. Krabben u. Krebse, vol. i. pt 8, p. 242, pl. xvii. fig. 95.
 1814. *Hyas araneus*, Leach, Edinb. Encycl. vol. vii. p. 431.
 1816. *Hyas araneus*, Leach, Malacostraca Podophth. Britannia, pl. xxi. A.
 1834. *Hyas aranea*, Milne-Edwards, Hist. Nat. Crust. vol. i. p. 312.
 1851. *Hyas araneus*, Brandt, Middendorff's Sibirische Reise, vol. ii. pt. i. p. 76.
 1853. *Hyas araneus*, Bell, British Stalk-eyed Crustacea, p. 31, fig. in text.
 1864. *Hyas araneus*, Goës, Crust. podophth. Succia &c., in OEfv. Vet.-Akad. Förh. p. 161 (extr. p. 1).
 1882. *Hyas coarctatus*, var., Hoek, Die Crustaceen des Willem Barents, in Nied. Arch. für Zool., Suppl. vol. i. p. 3, pl. i. fig. 1.
 1887. *Hyas araneus*, H. J. Hansen, Dijnphna Krebsdyr, p. 234.

In regard to this abundant, widely distributed, and well-known species there is still an unsettled question. Leach in one work mentions and in another figures a specimen measuring 16 inches across between the tips of the extended legs. The carapace of the specimen figured is $3\frac{1}{2}$ inches long by a little over $2\frac{1}{2}$ broad. These dimensions, as Leach himself recognizes and as subsequent experience has shown, are very uncommon. From this form, capable of so large a development, the same author in 1815 distinguished, as *Hyas coarctatus*, a second species, of which a specimen is considered fine when the carapace is $1\frac{1}{4}$ inch long by $\frac{3}{4}$ inch wide. Leach did not, however, lay any stress on the difference in size, but on a character less easily appreciable, namely, that the acute lateral postorbital process of the carapace is tuberculate to the rear in *Hyas araneus*, whereas to the rear in *Hyas coarctatus* it is much dilated and unarmed. The latter species moreover, in accordance with its name, has the sides of its carapace constricted. It is not said, and it would not be true to say, that they are without constriction in the other form. The fact appears to be that the constriction forms a small pocket (as in the smaller of Leach's two figures of *Hyas coarctatus*) only in small specimens, but that, as specimens increase in size, it becomes a shallow emargination.

Brandt, in distinguishing the species, uses Leach's character of tuberculation, saying that the part of the carapace in question has about two or three warts in *Hyas araneus* and only about one or none in *Hyas coarctatus*. His words are "subternis vel subbinis" and "subunica vel nulla," of which the meaning seems plain, although the Latinity is not Ciceronian. He adds that in *Hyas araneus* the breadth of the front third of the carapace is a little less or more than half the extreme breadth, but that in *Hyas coarctatus* this front third has more than three fourths, or about four fifths, of the extreme breadth. The two species live in the same waters, so that, when it comes to determining matrimonial alliances, one cannot help wondering how they manage without compasses to prevent a narrow-fronted Romeo from winning the affections of a broad-fronted Juliet, since we, with all appliances and means to boot, can scarcely keep their rival clans from mixing. According to Bell, "In the young state it is very difficult to distinguish the two species, as the former [*Hyas araneus*] has, in its early age, the spreading form of the postorbital processes which distinguishes the present species [*Hyas coarctatus*] in its perfect adult condition, and which is gradually lost by the other." Bell dismisses Hailstone's *Hyas serratus* as undoubtedly only a very young form of *Hyas coarctatus*.

Sars, in the 'Crustacea of the Norwegian North-Atlantic Expedition' (Crust. pt. 2, p. 2, 1886), records both *H. araneus* and *H. coarctatus*, and, further, considers Brandt's var. *alutacea* of the latter "to be strictly entitled to specific distinction." Unfortunately he does not give the characters to be relied on for keeping the three forms apart. Most of the specimens assigned by him to *H. coarctatus* were young individuals. He notices, as earlier authors had done, that this form descends into much deeper waters than those frequented by *H. araneus*.

Brandt considers the *Hyas coarctatus* of De Kay (Nat. Hist. of New York, 1843) to be a form intermediate between *H. araneus* and *H. coarctatus*. Professor S. I. Smith, in 'The Stalk-eyed Crustaceans of the Atlantic Coast of North America north of Cape Cod,' 1879, not only shows no doubt of the distinctness of these two species, but accepts a third from Stimpson. That author, he observes, in the Pr. Ac. Philadelphia, 1857, "describes a new species, *latifrons*, as common in Bering Sea, apparently using the same specimens which were a few months before referred to *H. coarctatus*. *H. latifrons*, though closely allied to *coarctatus*, is certainly

a good species or a very remarkable variety, and quite distinct from Brandt's variety *alutaceus*." Miers, on the other hand, in the 'Challenger' Brachyura, pronounces Stimpson's *H. latifrons* to be "very doubtfully distinct from *Ilyas coarctata*," though he recognizes Dana's *Ilyas lyratus* from the west coast of America as a very distinct species.

In 1882 Hoek, among the Crustacea of the 'Willem Barents' Expedition, describes and figures "*Ilyas coarctatus*, Leach, var.," and lays stress on measurements of the male chelipeds. But these appear to be far too variable with age and size of specimen to admit of any reliance being placed upon them, and, moreover, as Hansen has pointed out ('Dijmphna Krebsdyr,' p. 235), it is clear that Hoek's species is a true *Ilyas araneus*. Hansen's own conclusions are as follows:—"Specimens from the 'Dijmphna' give the same result as that of Hoek's table of measurements, that the breadth of the carapace in front, compared with its breadth behind, is relatively greater in the small than in the large specimens, just as the breadth in front is in the small specimens greater in relation to the length than in the large individuals. Whether, all things considered, *Ilyas coarctatus* is a valid independent species or only a variety of *H. araneus*, appears to me somewhat doubtful, although I have inspected a rather considerable number of animals at various ages and from various seas."

Into how many species the genus *Ilyas* will eventually be divided it is impossible to foresee. Dana's *H. lyratus* should, it seems, stand by itself. Of the other forms as yet known how happily, *sua si bona norint*, may all of them live under the common name of *Ilyas araneus*. But to expect that they will do so is utopian.

Mr. Bruce's specimens were obtained from off the north end of Kolguev Island at 12 fathoms, and from the western part of the Barents Sea, $76^{\circ} 17' N.$, $21^{\circ} 36' E.$, at 60 fathoms depth.

MACRURA.

Tribe ANOMALA.

Fam. Paguridæ.

Genus EUPAGURUS, Brandt, 1851.

Eupagurus pubescens (Kröyer).

1838. *Pagurus pubescens*, Kröyer, Danske Selsk. Skr. Afh. pt. 7, p. 314;
 Kröyer, Conspectus Crust. Grœnlandiæ, Naturh. Tidsskr. vol. ii.
 p. 251.

1846. *Pagurus pubescens*, Kröyer, Gaimard's Voy. du Nord, Crust., Atlas, pl. ii. fig. 1.
 1851. *Eupagurus pubescens*, Brandt, Middendorff's Sibiri-sche Reise, vol. ii. pt. 1, pp. 31, 34, 35.
 1853. *Pagurus Thompsoni*, Bell, British Stalk-eyed Crustacea, p. 372, fig. in text.
 1858. *Eupagurus pubescens*, Stimpson, and *Eupagurus Kröyeri*, Stimpson (both without description), Pr. Ac. Philad. pp. 75, 87.
 1859. *Eupagurus Kröyeri*, Stimpson, Ann. Lyc. Nat. Hist. New York, vol. vii. p. 89.
 1879. *Eupagurus pubescens*, S. I. Smith, Trans. Connect. Ac. vol. v. pt. 1, p. 47.
 1879. *Eupagurus Kröyeri*, S. I. Smith, *ibid.* p. 48.
 1882. *Eupagurus pubescens*, Sars, Forh. Selsk. Christian. no. 18, p. 42, pl. i. figs. 1-2.
 1886. *Eupagurus pubescens*, Henderson, Crust. Decap. Firth of Clyde, p. 26.
 1888. *Eupagurus pubescens*, var. *Kröyeri*, Henderson, Rep. Voy. 'Challenger,' vol. xxvii. p. 65.

In first establishing the species Kröyer assigned to it two distinctive characters, the long soft hairs clothing the chelipeds and the form of the left hand, which, however, he left undescribed. In the same year he gave another characterization as follows:—"Dorsal surface of the cephalothorax and the legs densely beset with yellow setæ, and a strong dentate carina of the right hand extending from the base of the finger to the outer carina of the wrist." This was followed by a comparison or contrast instituted between the new species and *Pagurus bernhardus*. No mention at all is made of the left hand; but Brandt is no doubt right in supposing that Kröyer by a slip of the pen wrote "dextræ" in place of "sinistræ."

Bell probably instituted his *Pagurus Thompsoni* in ignorance or forgetfulness of Kröyer's species, and he speaks of the small anterior leg (that is, the left cheliped) as "nearly linear," without noticing the characteristic carina. Stimpson found specimens which agreed with the figure in Gaimard's 'Voy. du Nord' in having the pubescence little demonstrative, and both he and afterwards Professor S. I. Smith concluded that Kröyer had mixed up two distinct species. Professor Smith finds numerous minute distinctions in the outline, position, and denticulation of the outer carina of the left hand in the two forms. But Professor Sars maintains that the two cannot possibly be separated specifically. He urges that the pubescence of body and legs is on the whole very variable, and that the form of the left chela varies a good deal in the two sexes—in the female fairly corresponding with Smith's account of *Eupagurus Kröyeri* and in the male with his *Eupagurus pubescens*. He finds the male as a rule more

strongly pubescent than the female. Professor Henderson contents himself with the compromise of accepting Stimpson's species as a variety of Kröyer's. In the feebleness of the pubescence Mr. Bruce's specimens make no very marked claim upon the original specific name, to which otherwise they may well have a right.

Localities. Off north end of Kolguev Island, 12 fathoms; Novaya Zemlya, 20 fathoms.

Tribe CARIDEA.

Fam. Crangonidæ.

Genus SABINEA, Owen, 1835.

Sabinea septemcarinata (Sabine).

1821. *Crangon septemcarinatus*, Sabine, Parry's Voyage, Appendix, no. x., Zoology, p. 58, pl. ii. figs. 11-13.

1835. *Sabinea septemcarinata*, Owen, Ross's 2nd Voyage, App., Zool. p. lxxxii.

1879. *Sabinea septemcarinata*, S. I. Smith, Tr. Connect. Ac. vol. v. pt. 1, p. 57, pl. xi. figs. 5, 9-13.

1890. *Sabinea septemcarinata*, Sars, Arch. Naturv. Christian. vol. xiv. p. 168, pl. v., pl. vi. figs. 1-13.

It has been pointed out by Professor Smith that two distinct species have sometimes been confounded under the name *septemcarinata*. The specimens to which that name properly belongs have the rostrum obtusely rounded at the tip and the telson subtruncate, its apex fringed with eight or more spines. On the other hand there are specimens of similar general appearance belonging to the species *Sabinea Sarsii*, Smith, 1879, which can readily be distinguished by the circumstance that the rostrum ends in an acute tip and that the telson likewise has its apex acute, with one or two spines on either side. Sars has pointed out that the *Myto Gaimardii* of Kröyer is in fact the first larval stage of *Sabinea septemcarinata*, and that in a very young post-larval condition that species is already sharply distinguished from *Sabinea Sarsii* by the character of the telson.

Mr. Bruce's specimens were obtained by the trawl off North Kolguev Island, at 12 fathoms and at 30 fathoms; and in the west of the Barents Sea, 76° 44'-76° 47' N., 30° 30'-29° 55' E., at 110 fathoms; at 76° 17' N., 21° 36' E., in 60 fathoms.

Genus *SCLEROCRANGON*, Sars, 1882.1882. *Sclerocrangon*, Sars, Forh. Selsk. Christian. no. 18, p. 45.1885. *Sclerocrangon*, Sars, Norwegian North-Atlantic Exp. vol. xiv., Crust. pt. 1, p. 14.*Sclerocrangon ferox*, Sars.1876. *Cheraphilus ferox*, Sars, Arch. Naturv. Christian. p. 339.1882. *Cheraphilus ferox*, Hoek, Ned. Arch. f. Zool., Suppl. vol. i. p. 9, pl. i. fig. 3.1885. *Sclerocrangon salebrosus*, Sars, Norwegian North-Atlantic Exp. vol. xiv., Crust. pt. 1, p. 15, pl. ii.1887. *Sclerocrangon ferox*, H. J. Hansen, Dijnphna Krebsdyr, p. 236.1890. *Sclerocrangon ferox*, Sars, Arch. Naturv. Christian. vol. xiv. p. 180.

The dentiform projections on the lower margins of the pleon-segments afford an easily observable distinction between this species and the *Sclerocrangon boreus* of Phipps. In *Sclerocrangon Agassizii*, S. I. Smith, the first pleon-segment has an obtuse tooth on the lower margin and the second has a slight tooth, but the following segments have the lower edges unarmed. Hansen points out that the *Crangon salebrosus* of Owen cannot be identified with the present species, since, besides other differences, it is described as having the carapace septemcarinate.

Mr. Bruce's specimens were obtained between 76° 24' N., 33° 43' E., and 76° 47' N., 29° 55' E., at depths of 100 and 110 fathoms; at 77° 14' N., in 76 fathoms.

Genus *SPIRONTOCARIS*, Spence Bate, 1888.*Spirontocaris polaris* (Sabine).1821. *Alpheus polaris*, Sabine, Parry's Voyage, Appendix no. x., Zoology, p. 60, pl. ii. figs. 5-8.1835. *Hippolyte polaris*, Owen, Ross's 2nd Voyage, App., Zool. p. lxxxv.1835. *Hippolyte borealis*, Owen, ibid. p. lxxxiv, pl. B, fig. 3.1842. *Hippolyte polaris*, Krøyer, Monogr. *Hippolyte's nordiske Arter*, p. 116, pl. iii. figs. 78-81, pl. iv. fig. 82.1842. *Hippolyte borealis*, Krøyer, ibid. p. 122, pl. iii. figs. 74-77.1879. *Hippolyte polaris*, S. I. Smith, Tr. Connect. Ac. vol. v. pt. 1, p. 80, pl. xi. figs. 1-4.1886. *Hippolyte polaris*, Kœlbel, Crustaceen von Jan Mayen, p. 11.1887. *Hippolyte polaris*, Hansen, Dijnphna Krebsdyr, p. 239.1899. *Spirontocaris polaris*, Scott, Journ. Linn. Soc. London, Zool. vol. xxvii. p. 63.

From Sabine onwards authors have noticed the great

variability in the number of the teeth of the rostrum both above and below. Professor Smith's conclusion that no specific distinction is tenable between *polaris* and *borealis* has been generally accepted. The American professor is also inclined to believe that *Hippolyte cultellata*, Norman, 1867, is another synonym, and Norman himself (Ann. & Mag. Nat. Hist. ser. 6, vol. xiii. p. 270) accepts it as such. It may be noticed that *cultellatum* is a word used by Kröyer in describing the rostrum alike of *polaris* and *borealis*. The variability in the pterygostomian spines (to disappearance) and in the number of dorsal aculei (from four to ten pairs) on the telson is fully discussed by Professor Smith. Koelbel gives the branchial formula as comprising a podobranchia on the second maxilliped, an epipod on each of the five appendages from the first maxilliped to the second trunk-leg, and a pleurobranchia on each of the five successive trunk-legs. As this species has seven subdivisions to the fifth joint of the second trunk-legs, or, in brief, a seven-jointed wrist, it seems proper to include it in the genus *Spirontocaris*. Hansen mentions 77 millim. as the length of a very large male.

A large specimen (about 3 inches long), with others not so large, was obtained at 70° 03' N., 49° 10' E., in 20 fathoms. A small specimen (about 1½ inch long), with eight pairs of dorsal spines on the telson and eight apical spines, of which the median six are subequal, was taken at 76° 29' N., 19° 08' E., in 140 fathoms.

Spirontocaris spinus (Sowerby).

- 1805. *Cancer spinus*, Sowerby, British Miscellany, p. 47, pl. xxiii.
- 1814. *Alpheus spinus*, Leach, Edinb. Encycl. vol. vii. p. 431.
- 1815. *Alpheus spinus*, Leach, Trans. Linn. Soc. London, vol. xi. p. 347.
- 1817. *Hippolyte Sowerbei*, Leach, Malac. Podophth. Britanniae, pl. xxxix.
- 1837. *Hippolyte Sowerbyi*, Milne-Edwards, Hist. Nat. Crust. vol. ii. p. 380.
- 1842. *Hippolyte Sowerbei*, Kröyer, Hippolyte's nordiske Arter, p. 90, pl. ii. figs. 45-54.
- 1879. *Hippolyte spinus*, S. I. Smith, Tr. Connect. Ac. vol. v. pt. 1, p. 68.
- 1882. *Hippolyte spinus*, Hoek, Crust. Willem Barents, in Nied. Arch. für Zool., Suppl. vol. i. p. 15, pl. i. figs. 4-7.
- 1886. *Hippolyte spinus*, Koelbel, Crustaceen von Jan Mayen, p. 11.
- 1888. *Spirontocaris spinus*, Bate, Rep. Voy. 'Challenger,' vol. xxiv. p. 596, pls. cvi., cvii.

The synonymy may with little doubt be amplified by the names *Hippolyte Liljeborgi*, Danielssen, 1861, and *Hippolyte securifrons*, Norman, 1863. Stimpson in 1860 adopts the

curious reading of the name, *Hippolyte spina*, as if *spinus* were an adjective. Spence Bate emphasizes the variability of the species by describing seven varieties. According to Kœlbel the branchial formula is the same as in *Spirontocaris polaris*, except for the additional epipod in the present species, which has one on the third trunk-leg, as observed by Krøyer.

Specimens were obtained at 76° 17' N., 21° 36' E., in 60 fathoms depth.

Spirontocaris Gaimardii (Milne-Edwards).

1837. *Hippolyte Gaimardii*, Milne-Edwards, Hist. Nat. Crust. vol. ii. p. 378.
 1842. *Hippolyte Gaimardii*, Krøyer, Hippolyte's nordiske Arter, p. 74, pl. i. figs. 21-29.
 1842. *Hippolyte gibba*, Krøyer, ibid. p. 80, pl. i. fig. 30, pl. ii. figs. 31-37.
 1864. *Hippolyte Gaimardii*, Goës, Crust. podophth. Suecicæ etc., (Efv. Vet.-Akad. Förh. p. 168 (extr. p. 8)).
 1879. *Hippolyte Gaimardii*, S. I. Smith, Tr. Connect. Ac. vol. v. pt. 1, p. 67, pl. ix. figs. 8, 9.
 1882. *Hippolyte Gaimardii*, Hoek, Crust. Willem Barents, Ned. Arch. für Zool., Suppl. vol. i. p. 13.
 1883. *Hippolyte Gaimardii*, Kœlbel, Crustaceen von Jan Mayen, p. 12.
 1887. *Hippolyte Gaimardii*, Hansen, Dijnphna Krebsdyr, p. 238.
 1888. *Hetairus Gaimardii*, Bate, Rep. Voy. 'Challenger,' vol. xxiv. p. 611, pl. cix. fig. 2.
 1893. *Spirontocaris Gaimardii*, Stebbing, Hist. Crust., Internat. Science Series, vol. lxxiii. p. 235.
 1899. *Spirontocaris Gaimardii*, Scott, Journ. Linn. Soc. London, Zool. vol. xxvii. p. 63, pl. iii. figs. 1, 2.

This species is notable for the absence of the pair of spines so commonly found in this genus over the eyes at the base of the rostrum. According to Kœlbel the branchial formula is the same as that of *Spirontocaris polaris*. Goës has been followed by subsequent authors in uniting the forms *gibba* and *Gaimardii**. With these he united *Hippolyte Belcheri*, Bell (Belcher's 'Voyage,' p. 402, pl. xxiv. fig. 1), and was inclined to unite *Hippolyte pandaliformis*, Bell (Brit. Stalk-eyed Crust. p. 294). Hoek considers that they should both be regarded as synonyms of *Gaimardii*. A specimen measuring $2\frac{1}{2}$ inches in length was obtained by Mr. Bruce. It has the third pleon-segment dorsally produced over the next with a rather broadly rounded apex, above which, but not reaching beyond it, is a narrow, though not acute, median projection. The rostrum has four teeth below and eight above, in addition to three on the carapace. The dorsal spines of the telson

* Miss M. J. Rathbun, however, keeps them distinct, but without comment, in her recently published 'List of Crustacea known to occur on or near the Pribilof Islands.'

are not exactly paired, being six on one side and five on the other.

Locality. 70° 51' N., 53° E., at a depth of 20 fathoms.

Spirontocaris turgida (Kröyer).

1841. *Hippolyte turgida*, Kröyer, Naturhist. Tidsskr. vol. iii. p. 575.
 1841. *Hippolyte Phippsii*, Kröyer, *ibid.* pp. 575-576.
 1842. *Hippolyte turgida*, Kröyer, *Hippolyte's nordiske Arter*, p. 100, pl. ii. figs. 57, 58, pl. iii. figs. 59-63.
 1842. *Hippolyte Phippsii*, Kröyer, *ibid.* p. 106, pl. iii. figs. 64-68.
 1864. *Hippolyte Phippsii*, Goës, Crust. podophth. Sueciæ etc., *Cefv. Vet.-Akad. Förh.* p. 169 (extr. p. 9).
 1879. *Hippolyte Phippsii*, S. I. Smith, Tr. Connect. Ac. vol. v. pt. 1, p. 73.
 1882. *Hippolyte Phippsii*, Hoek, Crust. Willem Barents, *Nied. Arch. für Zool.*, Suppl. vol. i. p. 17.
 1899. ? *Spirontocaris Phippsii*, Scott, Journ. Linn. Soc. Lond., Zool. vol. xxvii. p. 63, pl. iii. figs. 3, 4.

The suggestion made by Goës that Kröyer's *turgida* and *Phippsii* were respectively female and male of one species has been generally accepted. The priority of the name *turgida* has been as generally set aside, probably under the idea that the male was so obviously the superior animal that no rules of nomenclature could compete with its claim to preferential notice. Professor Smith includes in the synonymy the *Hippolyte vibrans* of Stimpson (*Ann. Lyc. Nat. Hist. New York*, vol. x. p. 125, 1871), and, with some doubt, *Hippolyte ochotensis*, Brandt, 1849.

Specimens were obtained by Mr. Bruce at 76° 17' N., 21° 36' E., in 60 fathoms depth.

SCHIZOPODA.

Fam. Euphausiidæ.

Genus RHODA, Sim, 1872.

1872. *Rhoda*, Sim, "Stalk-eyed Crust. N.E. Coast of Scotland," in *Scottish Naturalist*, sep. copy, p. 6 (*vide* Norman).
 1883. *Boreophausia*, Sars, Forh. Selsk. Christian. no. 7, p. 11.
 1886. *Boreophausia*, Norman, Fourth Annual Rep. Fish. Board Scotland, p. 156.
 1892. *Boreophausia*, Norman, Ann. & Mag. Nat. Hist. ser. 6, vol. ix. p. 461.
 1893. *Rhoda*, Stebbing, Hist. Crust., Internat. Science Series, vol. lxxiv. p. 263.

Rhoda inermis (Krøyer).

1846. ? *Thysanopoda inermis*, Krøyer, Gaimard's Voy. du Nord, Crust. pl. vii. figs. 2 a-d.
 1882. *Euphausia inermis*, Sars, Forh. Selsk. Christian. no. 18, p. 51, pl. i. fig. 15.
 1885. *Boreophausia inermis*, Sars, 'Challenger' Reports, vol. xiii. Schizopoda, p. 64.
 1886. *Boreophausia inermis*, Sars, Norwegian North-Atlantic Exp., Crust. vol. ii. p. 13.
 1887. *Boreophausia inermis*, Hansen, Malac. Grœnl. occid., Vid. Medd. p. 53.
 1892. *Boreophausia inermis*, Norman, Ann. & Mag. Nat. Hist. ser. 6, vol. ix. p. 461.
 1893. *Rhoda inermis*, Stebbing, Hist. Crust. p. 263.

Norman having identified the *Boreophausia Ruschii* (M. Sars) with *Rhoda Jardineana*, Sim, 1872, it seems clear that the generic name *Boreophausia*, proposed by Sars in 1883, must give way to the much earlier name *Rhoda*.

Mr. Bruce's specimens of *Rhoda inermis* were taken on two occasions in July by the tow-net at night.

Fam. Mysidæ.

Genus MYSIDEIS, Sars, 1869.

1869. *Mysideis*, Sars, Undersøgelser over Christianiaffjordens Dybvands-fauna, p. 25.
 1870, 1879. *Mysideis*, Sars, Monogr. Norges Mysider, pt. 1, p. 9, pt. 3, pp. 1, 110.

On page 9 of the 'Monograph' Sars assigns *Mysideis* to the group in which all the pleopods of the male are unlike those of the female, and to the division of that group which has the molar of the mandibles distinct, separating the genus from its companions by the character that the incisive lobes of the *first* maxillæ are only two instead of three. The full generic character in pt. 3, page 1, and the subsequent specific descriptions and figures, agree with the original account in 1869 in applying the character to the *second* maxillæ, to which alone it could be appropriate. From the type species, *Mysideis insignis*, the *M. grandis* of Goës is very clearly distinguished by the subacute or tubercular projection in the middle of the outer margin of the first maxillæ, as well as by the truncate apex of the telson.

Mysideis grandis (Goës).

1864. *Mysis grandis*, Goës, Crust. podophth. Sueciæ etc., Œfv. Vet.-Akad. Förh. p. 176 (extr. p. 16).

1879. *Mysideis grandis*, Sars, Monogr. Norges Mysider, pt. 3, p. 106, pls. xli., xlii.

A specimen, $1\frac{1}{2}$ inch in length, and two of smaller size, were obtained at $70^{\circ} 51' N.$, $53^{\circ} E.$, in about 20 fathoms depth, comparatively shallow water for this apparently rare species.

CUMACEA.

In this group the only captures observed were *Leucon pallidus*, Sars, from a depth of 60 fathoms, and some small specimens taken with the tow-net, probably belonging to *Lamprops fuscata*, Sars; but the lateral margin of the carapace is furnished with five or six denticles, the first joint of the inner branch of the uropods has only six spines, and the apex of the telson scarcely looked as if it could have been furnished with more than three spines, the full number in *L. fuscata* being five.

ISOPODA.

Tribe CHELIFERA.

Genus CRYPTOCOPE, Sars, 1880.

1880. *Cryptocope*, Sars, Isopoda Chelifera, Arch. Naturv. p. 49.

1886. *Cryptocope*, Norman and Stebbing, Trans. Zool. Soc. London, vol. xii. pt. 4, p. 106.

1896. *Cryptocope*, Sars, Crustacea of Norway, vol. ii. p. 33.

Cryptocope arctica, Hansen.

1887. *Cryptocope arctica*, Hansen, Dijnphna Krebsdyr, p. 209, pl. xxi. fig. 4; id. Malac. Grœnl. occid., Vid. Medd. p. 180, pl. vii. figs. 1-1 c.

This minute species, less than $\frac{1}{2}$ inch long, differs from the *Cryptocope Vöringii* and *Cryptocope abbreviata* in having setæ on the pleopods, of which the other two species are devoid. The setæ are apical in the specimen I have examined. It has the antennæ agreeing with those figured by Hansen in pl. vii. fig. 1 b for the female. Also apparently the outer branch of the uropod is two-jointed, in agreement with Hansen's figure of that microscopic appendage in the ovigerous female. According to Sars the outer branch is one-jointed in the female both of *C. abbreviata* and of the larger *C. Vöringii*, although in 1876, when describing the latter as *Tanais Vöringii*, he had stated that both branches of the uropods were two-jointed in the female.

Mr. Bruce's specimens came from a depth of 100 fathoms.

Tribo LABELLIFERA.

Fam. Anthuridæ.

Genus CALATHURA, Norman and Stebbing, 1886.

1886. *Calathura*, Norman and Stebbing, Trans. Zool. Soc. London, vol. xii. pt. 4, p. 122.

1897. *Calathura*, Sars, Crustacea of Norway, vol. ii. p. 44.

To this genus Sars assigns three species—Stimpson's *Anthura brachiata*, his own *Paranthura norvegica*, 1872, and Bonnier's *Calathura affinis*, 1896. But the last of these three should be referred to the genus *Leptanthura*, Sars, 1897. It is, I think, quite certain that in the genus *Calathura* the inner ramus of the uropoda is not biarticulate, but, in accordance with the view separately propounded by Dr. Anton Dohrn for *Paranthura Costana*, and by Dr. Charles Chilton* for the Anthuridæ in general, only one-jointed. The outer ramus is articulated near the base of the peduncle and there is the possibility that the elongate peduncle includes a coalesced first joint of the inner ramus, but, at least in *Calathura*, the homology of such a first joint is not proved either by perceptible suture or power of movement.

Calathura brachiata (Stimpson).

1853. *Anthura brachiata*, Stimpson, Marine Invertebrata of Grand Manan, p. 43.

1874. *Anthura brachiata*, Harger, in Verrill and Smith's Invert. Vineyard Sound, p. 573.

1875. *Paranthura arctica*, Heller, Denk. Ak. Wien, vol. xxxvi. p. 38 (14), pl. iv. figs. 9-12.

1886. *Calathura brachiata*, Norman and Stebbing, Trans. Zool. Soc. London, vol. xii. pt. 4, p. 131, pl. xxvi. fig. 1.

1897. *Calathura brachiata*, Sars, Crustacea of Norway, vol. ii. p. 46, pl. xix. fig. 2.

Heller accurately describes the uropods in agreement with Dohrn and Chilton, but, like Gerstaecker, he regards the upper ramus as the inner instead of the outer, a problem in homology which, as Dr. Chilton suggests, can perhaps only be determined by an appeal to embryology.

A single specimen, 1 inch long, was obtained at or near 71° 31' N., 49° 12' E., in 76 fathoms.

* Trans. Linn. Soc. London, 2nd ser. Zool. vol. vi. pt. 2, p. 317.

Tribe VALVIFERA.

Fam. Idoteidæ.

Genus CHIRIDOTEA, Harger, 1878.

1878. *Chiridotea*, Harger, Amer. Journ. Sci. vol. xv. p. 374.

1880. *Chiridotea*, Harger, U.S. Fish. Comm. pt. 6, p. 337.

1882. *Glyptonotus* (part.), Miers, Journ. Linn. Soc. London, Zool. vol. xvi. p. 9; Hoek, Ned. Arch. für Zool., Suppl. vol. i. p. 29.

1897. *Chiridothea*, Sars, Ann. Mus. Zool. St. Pétersb., Extr. p. 21.

As pointed out by Sars, and earlier by Miers himself, though the latter did not regard the distinction of generic value, this genus is separated from *Glyptonotus* by the important character that it has the side-plates distinctly defined on six segments of the peræon, from the second to the seventh, while in *Glyptonotus* they are only defined on the last three.

Chiridotea Sabini (Krøyer).

1847. *Idothea Sabini*, Krøyer, Naturh. Tidsskr. ser. 2, vol. ii. pp. 394, 401.

1846? *Idothea Sabini*, Krøyer, Gaimard's Voy. du Nord, Crust., Atlas, pl. xxvii. figs. 1 a-o.

1875. *Idotea Sabini*, Heller, Denk. Ak. Wien, vol. xxxvi. p. 38 (14).

1882. *Glyptonotus Sabini*, Miers, Journ. Linn. Soc. London, Zool. vol. xvi. p. 15, pl. i. figs. 3-5.

1882. *Glyptonotus Sabini*, Hoek, Ned. Arch. für Zool., Suppl. vol. i. p. 29, pl. ii. figs. 11, 12.

1887. *Glyptonotus Sabini*, Hansen, Dijnphna Krebsdyr, p. 193.

1897. *Chiridothea Sabini*, Sars, Ann. Mus. Zool. St. Pétersb., Extr. p. 21.

A single specimen, 3 inches long, in full agreement with Krøyer's figures, was obtained near 77° 14' N., 38° 26' E., in 76 fathoms.

Tribe ASELLOTA.

Fam. Janiridæ.

Specimens of *Janira tricornis* (Krøyer) were obtained from depths of 20 and 27 fathoms.

Fam. Munnidæ.

Munna Fabricii, Krøyer, was taken from 60 fathoms depth.

Fam. Munnopsidæ.

Specimens of *Munnopsis typica*, M. Sars, in somewhat damaged condition, came up from 100 fathoms, and *Eurycope mutica*, Sars, from 60 fathoms.

AMPHIPODA.

Of these it may be sufficient to enumerate the species, most of them being well known and having been frequently discussed. I am aware that faunistic lists, without any particulars to guarantee the identification or to warn the reader of lurking errors, are of little value; but the attempt to give them value by adding descriptions would often make it impossible to give them at all.

Socarnes Vahli (Kröyer). From about 20 fathoms.

Anonyx nugax (Phipps). As usual in very great abundance. In small specimens, with acute angles to the upturned corners of the third pleon-segment, the knobbed spine of the first and second peræopods is quite as conspicuous as in *Anonyx Lilljeborgii*.

Hoplonyx similis, Sars.

Onisimus brevicaudatus, Hansen. From 76 fathoms.

— *plautus* (Kröyer).

Chironesimus Debruynei (Hoek). From 76 fathoms.

Pseudalibrotus littoralis (Kröyer). Taken in tow-net.

Orchomenella minuta (Kröyer). From 75 fathoms.

Andaniella pectinata, Sars.

Byblis longicornis, Sars. From 76 fathoms.

Proboloides Bruzelii (Goës).

Monoculopsis longicornis (Boeck). The rami of the third uropods in this specimen are quite devoid of spines, the telson apically rounded, some appendages abnormal, as if renewed after accidental injury, but the specimen is otherwise in exceptionally good preservation.

Acanthostpheia pulchra, Miers. Fragment.

Acanthonotosoma serratum (O. Fabricius).

Pardalisca cuspidata, Kröyer. From 60 fathoms.

Rhachotropis aculeata (Lepechin).

— *inflata*, Sars. From 60 fathoms.

Apherusa glacialis (Hansen). Taken in tow-net.

Atylus carinatus (J. C. Fabricius). From 17 fathoms.

Guernea coalita (Norman).

Melita dentata, Kröyer.

Gammarus locusta (Linn.).

Ischyrocerus anguipes, ♀, Kröyer.

Erichthonius (?) *Hunteri* (Bate). From 100 fathoms.

Caprella microtuberculata, Sars. Shore, east coast of Kolguev; ♀, the flagellum of the first antenna with only eleven joints, the dorsal tubercles of the body numerous, agreeing with Sars's description much better than with his figure in the 'Norwegian North-Atlantic Exp., Crust.,' p. 222, pl. xviii. fig. 3.

Euthemisto libellula (Lichtenstein). Taken in tow-net.

— *crassicornis* (Kröyer). Taken in tow-net.

— (?) *compressa* (Goës). Fragment.

Parathemisto oblivia (Kröyer). Taken in tow-net.

Besides the species above named, Mr. Bruce's collection may still afford some gleanings in the tubes of small mixed Amphipoda. One or two small species of Pantopoda were observed, and outside the limits of the Malacostraea some large masses of *Balani* were conspicuous. One or two species of *Macrura* procured while Mr. Bruce was with the Prince of Monaco do not come within the scope of the present report*.

* I may take this opportunity of announcing a new genus required in my revision of the Amphipoda.

Fam. Phliadidæ.

PALINNOTUS, gen. nov.

In general agreement with *Pereionotus*, but distinguished as follows:—Upper lip not bilobed. First maxillæ having a small spinule representing the palp. Maxillipeds with the outer plates reaching slightly beyond the three-jointed palp and minutely fringed on the distal half of the inner margin. The third pleopods, but not the second, with the inner side of the peduncle produced. The second uropods are developed in the female (male unknown), short, uniramous, and the third uropods are without distinction between peduncle and ramus, as in *Pereionotus*.

The type species is *Palinnotus Thomsoni*, Stebbing, previously referred to *Pereionotus*.